

SEQUENCE LISTING

<110> NIKOLICH, MIKELJON
HOOVER, DAVID

<120> IMMUNOGENIC COMPOSITIONS INCLUDING ROUGH PHENOTYPE BRUCELLA HOST STRAINS
AND COMPLEMENTATION DNA FRAGMENTS

<130> ARMY 176

<140> NOT KNOWN

<141> 2003-12-11

<150> US 60/402,164
US 60/533,016

<151> 2002-12-12
2003-09-15

<160> 2

<210> SEQ ID NO 1

<211> LENGTH: 2693

<212> TYPE: DNA

<213> ORGANISM: Brucella melitensis

<220> FEATURE:

<400> SEQUENCE: 1

caccttatgt ttgggacatt ttaattagga acgtttatgc	40
cttcggatgc cgtgggctgt gcatccgcat gagggatggc	80
tttgcgtttc tgcgctttga agatgttgaa attgggttag	120
ggcgcgaata tgggtggtgt agcctaccag catatgagtt	160
tcgaaatttt gaggggttat ttcttcgccg caccgaagcc	200
actggattgg atggatatac agaccttggga tacgtcccag	240
atgctgaaca gcgggggttc atctttgcag acggagcagc	280
cctccacatc aatagcctgt ttgcagataa taacaagggt	320
gatggcgtgt ttgccaataa cgtccaatac gtagatggaa	360
acgatctcaa ttcattccatc gacggcgga ctgggttcaa	400
ttttatcaac gtagatcgca taaacatcaa tacgatccgc	440
agtgggtggc gccggaatat ggcaccagga aatcttaaca	480
ctgtttccca aggtatctct ttgaatgcaa attgtcagac	520
tgttaattata ggcaacgcag ttaccacaaa ctggtgaagt	560
cacggttttt atagccaagc tcaggacatt ttggttaatg	600
gtctgatatc acgtgataat ggcggaagg ggtacgttgc	640
agagggttca gcagggtcat ctctcctaaa tggggccgtt	680
ttcagagata atgtagcagg gaattatttt acaggaggga	720
caagcgtaaa ccatctcgcg aacttccaac ttcataactc	760
tagcaccggg gggaaaactt ttgtggccaa tgtcaccaca	800
aatgggtctg cataacggtc cttgccattt taactataaa	840
ttagctattc ccgcgcatta agagtagaca cgggaaatca	880
gtatggctcc gagacatatt acagttatcc taccagctaa	920
gtaccgaggc ggaagtcttc gagttacgaa gaatatcggt	960
cgaatgcttt tgaagggaag tcagaattat ggtgaacagt	1000
gtcaagttag attggcagta cgtgccgata cctacgatat	1040
tggggaggag tttcgtgatc ttatcgataa tgggtgtagag	1080
gttcgggaaa tatcattcaa agaagttcct ccagaagatg	1120
ttaacaatgc taactatttc caaggtagaa atatcgacct	1160

acagtcgaga	acctattggc	taatggagga	tggccaaaac	1200
aactgtgccg	atagtgaacct	ttggctagtt	gtatcctact	1240
ctgtagagta	tcctattgcc	cgcataaggc	cgacactgat	1280
atttgccacc	gatttcattc	aaaggtagct	acctgatatt	1320
atttgccac	cacggcccgg	tgagggggat	gctgaggctc	1360
ttgcgttctt	acgacaatca	gacggcgtac	tagctacaac	1400
accacacacg	cggctggatg	cgatttcata	cgctggctta	1440
cctgcgtcca	aagtttatct	tgctccgatg	gagtttgacc	1480
cgacgttttt	ggatcgttac	cggtcagtgt	ctaaggttaa	1520
ggaaccttat	ttcctttggc	caaccaaccc	aaatgctcac	1560
aaaaaccatg	caaaagcggt	tcaagcgcta	gacctatatt	1600
acggcaaact	aaagggttaag	ataaagacaa	agatagtcgg	1640
tgtgagtagt	gtgcggatgg	acccatccca	tcgatggcag	1680
gccaaagtacg	aaaataaggc	ttatgtgaaa	tctgtacggg	1720
aaattgttgc	gggtctcgac	aacctgaaaa	gcaatgttga	1760
gttcgctggt	gaggttgccg	acaaggagta	tgccggagctt	1800
cttgcttcag	cttgtttctt	ttggcatcca	actttggcag	1840
acaacggaac	ttttgctgcg	gtcgaagcgg	catatatggg	1880
atgtccaacg	ctttcaaacg	actaccgcga	gatgcggtat	1920
attttctaacc	gtttcgaagt	tcccatgcag	tatttttaacg	1960
caaggctctgt	gaaggaaatg	gcatacgcgc	ttaagcaaatt	2000
ggaggagacg	ccaatagatg	taggtttatt	gccaagtcga	2040
gaaaccttat	ctctgcattc	gtgggaagct	cacgcttccg	2080
aatactggga	tgtgatcgtg	agggcagcgg	catgaataag	2120
ctcggcgtgt	ttatcggcta	taaccagggc	caattagatc	2160
catatcaggg	tatttctcgc	ttaattgcat	tcgtgatcaa	2200
gggggacctg	aaccagggtg	gcggtgtaac	aattgcttgc	2240
cccggctggc	taaaggacga	tgtacgtggt	cttttggaag	2280
atgctgatat	cccacttgaa	gcggtcaaaa	ttatcgcgac	2320
gaatggtcag	cctccattgg	cttcgttatg	gaagttgaga	2360
gataagttcc	gtaagagacg	gacgagtaaa	cgaaaacgtc	2400
tctggctgga	gcgctatggs	aaaaatgttg	caaattttgt	2440
tgacagaatg	ctttctttgc	gctcgtattg	ggggattttt	2480
ttgggggctg	ctgcaattgc	tgtagtgaact	attctacttg	2520
ccgtaccaat	tgctatagcc	ttcacgcgtc	ttatcgggtc	2560
tctatttgct	cgtcggctta	ttagacgtgt	tatcagggtca	2600
aagcttggtt	tgttttttca	caaaaatgcc	aatcaattca	2640
acaaattaat	gtcatctgat	gaaaccatcg	accggatgag	2680
ggaacgggaa	ttc			2693

<210> SEQ ID NO 2

<211> LENGTH: 410

<212> TYPE: PRT

<213> ORGANISM: Brucella melitensis

<400> SEQUENCE: 2

Met	Ala	Pro	Arg	His	Ile	Thr	Val	Ile	Leu
				5					10
Pro	Ala	Lys	Tyr	Arg	Gly	Gly	Ser	Leu	Arg
				15					20
Val	Thr	Lys	Asn	Ile	Val	Arg	Met	Leu	Leu
				25					30
Lys	Gly	Ser	Gln	Asn	Tyr	Gly	Glu	Gln	Cys
				35					40
Gln	Val	Arg	Leu	Ala	Val	Arg	Ala	Asp	Thr
				45					50
Tyr	Asp	Ile	Gly	Glu	Glu	Phe	Arg	Asp	Leu
				55					60

Ile Asp Asn Gly Val Glu Val Arg Glu Ile	65	70
Ser Phe Lys Glu Val Pro Pro Glu Asp Val	75	80
Asn Asn Ala Asn Tyr Phe Gln Gly Arg Asn	85	90
Ile Asp Leu Gln Ser Arg Thr Tyr Trp Leu	95	100
Met Glu Asp Gly Gln Asn Asn Cys Ala Asp	105	110
Ser Asp Leu Trp Leu Val Val Ser Tyr Ser	115	120
Val Glu Tyr Pro Ile Ala Pro Ile Arg Pro	125	130
Thr Leu Ile Phe Ala Thr Asp Phe Ile Gln	135	140
Arg Tyr Val Pro Asp Ile Ile Trp Pro Pro	145	150
Arg Pro Gly Glu Gly Asp Ala Glu Ala Leu	155	160
Ala Phe Leu Arg Gln Ser Asp Gly Val Leu	165	170
Ala Thr Thr Pro His Thr Arg Leu Asp Ala	175	180
Ile Ser Tyr Ala Gly Leu Pro Ala Ser Lys	185	190
Val Tyr Leu Ala Pro Met Glu Phe Asp Pro	195	200
Thr Phe Leu Asp Arg Tyr Arg Ser Val Ser	205	210
Lys Val Lys Glu Pro Tyr Phe Leu Trp Pro	215	220
Thr Asn Pro Asn Ala His Lys Asn His Ala	225	230
Lys Ala Phe Gln Ala Leu Asp Leu Tyr Tyr	235	240
Gly Lys Leu Lys Gly Lys Ile Lys Thr Lys	245	250
Ile Val Gly Val Ser Ser Val Arg Met Asp	255	260
Pro Ser His Arg Trp Gln Ala Lys Tyr Glu	265	270
Asn Lys Ala Tyr Val Lys Ser Val Arg Glu	275	280
Ile Val Ala Gly Leu Asp Asn Leu Lys Ser	285	290
Asn Val Glu Phe Ala Gly Glu Val Ala Asp	295	300
Lys Glu Tyr Ala Glu Leu Leu Ala Ser Ala	305	310
Cys Phe Leu Trp His Pro Thr Leu Ala Asp	315	320
Asn Gly Thr Phe Ala Ala Val Glu Ala Ala	325	330
Tyr Met Gly Cys Pro Thr Leu Ser Asn Asp	335	340

Tyr Pro Gln Met Arg Tyr Ile Ser Asn Arg
345 350
Phe Glu Ile Pro Met Gln Tyr Phe Asn Ala
355 360
Arg Ser Val Lys Glu Met Ala Ser Ala Leu
365 370
Lys Gln Met Glu Glu Thr Pro Ile Asp Val
375 380
Gly Leu Leu Pro Ser Arg glu Thr Leu Ser
385 390
Leu His Ser Trp Glu Ala His Ala Ser Glu
395 400
Tyr Trp Asp Val Ile Val Arg Ala Ala Ala
405 410